

REMARKS

Applicants will address each of the Examiner's rejections in the order in which they appear in the Final Rejection.

Claim Rejections - 35 USC §103

Claims 20-22, 44, 45 and 48

In the Final Rejection, the Examiner rejects Claims 20-22, 44, 45 and 48 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al.¹ and Monk. This rejection is respectfully traversed.

In the Office Action, the Examiner admits that Arai does not disclose some of the claimed limitations of the rejected claims. The Examiner, however, contends that it would have been obvious to one of ordinary skill in the art to modify the process of Arai so as to utilize, as the evaporation source, the evaporation source of Grothe.

Applicants respectfully disagree. Grothe uses an electron beam evaporator. Irradiating with such a high power electron beam will rapidly heat a vaporization material, such as for example, metal. Further, heating with the electron beam causes a high temperature at the spot of the vaporization material.

In contrast, the heat-resistant temperature of an organic EL material, such as that in the claimed invention, is low. In fact, typically the temperature of an organic EL material is at most 150°C, and preferably from 80°C to 100°C. Therefore, one of ordinary skill in the art would not use an electron beam evaporator for an organic EL material. Hence, one of ordinary skill in the art would not use the electron beam evaporator of Grothe for the EL cell of Arai. As a result,

¹ Applicants assume that this is US Patent No. 3,931,490, as opposed to US 3,391,490 cited in the Final Rejection.

the combination of these references could only be by hindsight reconstruction using the claims of the present application as a blueprint. The Court of Appeals for the Federal Circuit has held numerous times that such hindsight reconstruction is improper. Accordingly, the combination of these references is improper, and any rejection based thereon should be withdrawn.

In addition, Grothe teaches that, when coating a substrate by vapor deposition, evaporation sources elongated in one dimension result in enhanced vapor density, and the vapor deposit is essentially uniform over the entire width of the surface. (see Col. 5, lns. 40-50 and 60-63 in Grothe). Hence, the evaporation source has width, but the target of the evaporation is the entire surface of the substrate. Further, both the evaporation source and the substrate are fixed.

In contrast, the present invention is directed to a method in which a evaporation source has width, and the target of the evaporation is the relative position of the substrate. Further, the relative position of the substrate is repeatedly moved with respect to the first evaporation source, as recited in the claims. Therefore, Grothe is very different than the claimed invention and does not disclose or suggest the claimed invention.

For at least the above-stated reasons, the combination of references is improper, and even if arguably combined, the combination fails to disclose or suggest the claimed invention. Accordingly, the claims are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 37, 43, 48 and 53

The Examiner also rejects Claims 37, 43, 48 and 53 under 35 USC §103 as being unpatentable over Arai et al. in view of Bennett and Grothe et al. This rejection is also respectfully traversed.

In the Office Action, the Examiner combines Arai and Grothe in the same manner discussed above. As explained supra, the combination of these references is improper, and as a result, the rejection based thereon is improper.

In addition, the Examiner admits that Arai (and presumably Grothe) does not disclose some of the claimed limitations of the rejected claims. The Examiner, however, contends that it would have been obvious to one of ordinary skill in the art to modify the method of Arai so as to move the evaporation source relative to the substrate, as allegedly taught by Bennett.

Applicants respectfully disagree. Bennett does not teach or suggest each of the first and second evaporation sources being longer in the first direction than in the second direction, as recited in the rejected claims. Further, Bennett's vapor deposition process is a conventional irradiation from a point, which is different from the claimed invention of the present application.

Accordingly, for at least the above-stated reasons, the claims are patentable over these cited references, and it is respectfully requested that this rejection be withdrawn.

Claims 38, 48 and 56

The Examiner also rejects Claims 38, 48 and 56 under 35 USC §103 as being unpatentable over Arai et al. in view of Bennett, Grothe et al and Monk. This rejection is also respectfully traversed.

For many of the reasons discussed above, the rejection of these claims is improper, and the claims are not disclosed or suggest by the cited references and are patentable thereover. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claims 39, 48, 53 and 57

The Examiner also rejects Claims 39, 48, 53 and 57 under 35 USC §103 as being unpatentable over Arai et al. in view of Feuerstein et al, Bennett, and Yamamoto et al. This rejection is also respectfully traversed.

In the Office Action, the Examiner admits that Arai does not disclose some of the claimed limitations of the rejected claims. The Examiner, however, contends that it would have been obvious to one of ordinary skill in the art to modify the process of Arai so as to utilize an evaporation source comprising a plurality of evaporation cells arranged along a first direction so as to achieve greater control over deposition thickness and uniformity, as allegedly suggested by Feuerstein.

Applicants respectfully disagree. Feuerstein uses an electron beam evaporator. As explained supra, an electron beam uses very high energy. For an organic EL material, such as that recited in the claims of the present application, the local evaporation power of such an electron beam is too high, and as a result, the organic EL material would decompose. Hence, one of ordinary skill in the art would not use an electron beam evaporator for the organic EL material, and one of ordinary skill in the art would not use the electron beam evaporator of Feuerstein for the EL cell of the reference to Arai.

As a result, the combination of these references could only be by hindsight reconstruction using the claims of the present application as a blueprint which is improper. Accordingly, the combination of these references is improper, and any rejection based thereon should be withdrawn.

Claims 40, 48 and 58

The Examiner also rejects Claims 40, 48 and 58 under 35 USC §103 as being unpatentable over Arai et al. in view of Feuerstein et al, Bennett, and Yamamoto et al. or in the alternative over Arai et al. in view of Feuerstein et al. Bennett, Monk, and Yamamoto. This rejection is also respectfully traversed.

For many of the reasons discussed above, the rejection of these claims is improper, and the claims are not disclosed or suggest by the cited references and are patentable thereover. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 49

The Examiner also rejects Claim 49 under 35 USC §103 as being unpatentable over Arai et al. in view of Grothe et al and Monk and further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 54

The Examiner also rejects Claim 54 under 35 USC §103 as being unpatentable over Arai et al. in view of Bennett Grothe et al. and Yamamoto. This rejection is respectfully traversed.

For many of the reasons discussed above, the rejection of these claims is improper, and the claims are not disclosed or suggest by the cited references and are patentable thereover. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 55

The Examiner also rejects Claim 55 under 35 USC §103 as being unpatentable over Arai et al. in view of Bennett, Grothe et al, Monk, and Yamamoto et al. This rejection is respectfully traversed.

For many of the reasons discussed above, the rejection of these claims is improper, and the claims are not disclosed or suggest by the cited references and are patentable thereover. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 59

The Examiner also rejects Claim 59 under 35 USC §103 as being unpatentable over Arai et al., in view of Bennett and Grothe et al, further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 60

The Examiner also rejects Claim 60 under 35 USC §103 as being unpatentable over Arai et al., in view of Bennett, Grothe et al. and Monk further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 61

The Examiner also rejects Claim 61 under 35 USC §103 as being unpatentable over Arai et al., in view of Feuerstein et al., Bennett, and Yamamoto further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Claim 62

The Examiner also rejects Claim 62 under 35 USC §103 as being unpatentable over Arai et al., in view of Feuerstein et al., Bennett and Yamamoto et al. or in the alternative over Arai et al., in view of Feuerstein et al., Bennett, Monk and Yamamoto et al further in view of Spitzer et al. This rejection is respectfully traversed.

This claim is a dependent claim. Therefore, for at least the reasons discussed above for the independent claim, this claim would also be patentable. Accordingly, it is requested that this rejection be withdrawn.

Therefore, it is respectfully submitted that the §103 rejections have been overcome, and it is requested that the rejections be withdrawn and the claims allowed.

New Claims

Applicants are adding new Claims 63-68. Claims 63-68 include the feature that uniformity of the distribution of film thickness of a thin film in a rectangular shape, elliptical

shape, or a linear shape region is maintained by using the first evaporation source during the evaporation. This feature is supported, for example, in the specification of the present application at page 6, lns. 17-23. Therefore, it is requested that these new claims be entered and examined at this time.

If any further fee is due for these new claims, please charge our deposit account 50/1039.

Conclusion


Accordingly, for at least the above-stated reasons, Applicants respectfully submit that the present application is in a condition for allowance and should be allowed.

If any further fee is due for this amendment, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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Mark J. Murphy
Registration No.: 34,225
COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
200 West Adams Street, Suite 2850
Chicago, Illinois 60606
(312) 236-8500